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NASA Wallops Researchers Receiving Technology Leadership Award

Two researchers from the Wallops Flight Facility, Wallops Island, Va., are part of two NASA Goddard Space Flight Center, Greenbelt, Md., projects that have been selected for the 1999 Government Technology Leadership Award sponsored by the Government Executive Magazine.

Dr. Steven R. Long and William Krabill are part the Hilbert-Huang Transform team and the Airborne Light Detection and Ranging (LIDAR) Topographic Mapping System team, respectively.

The award recognizes project teams that have directly aided in the missions of their organizations by boosting efficiency and effectiveness, lowering costs, and/or improving service to the public, through original uses of technology. Both of these new technologies are successfully being used by either a commercial enterprise or by a research institution.

The awards will be presented at a ceremony at the Reagan International Trade Center, Washington, D.C., on Dec. 1, 1999. Additional details about the projects also will be included in a special supplement to the magazines' December issue.

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The Hilbert-Huang Transformation Method, developed by NASA scientists, is a unique spectralanalysis method for analyzing nonlinear and nonstationary data and images.

The method enables better results and labor savings for diverse applications within such areas as: basic nonlinear mechanics, climate studies, earthquake engineering, geophysical exploration, submarine design, structural damage detection in bridges and buildings, satellite data analysis, blood pressure variations and heart arrhythmia.

NASA has filed four patents on the Hilbert-Huang Transformation Method**.** Over 60 universities and government agencies been granted access to the method through the NASA Space Act.

The Hilbert-Huang Transform team is represented by Long and Dr. Norden Huang of Goddard's Laboratory for Hydrospheric Processes.

The Airborne LIDAR Topographic Mapping System (ALTMS) provides unparalleled rapid, efficient and accurate 3-D virtual mapping/monitoring of Earth features at significant time and monetary savings. This FAA-certified system provides information and capabilities that are impossible with traditional methods. It can operate in various lighting, weather and vegetation conditions and has absolute vertical accuracy of near one foot.

The ALTMS was developed jointly by NASA Goddard scientists, Houston Advanced Research Center and TerraPoint, LLC located in The Woodlands, Texas. This instrument was created to provide customers with readily available and affordable digital Earth surface data.

The ALTMS merges laser technology - which is digital, faster, less expensive and requires less processing than conventional technologies - global positioning, and mapping software into a miniaturized package that is mounted on light aircraft. Applications include vital projects such as flood plain mapping to develop emergency management and response plans, habitat/ecological characterization and preservation, shoreline/erosion surveys, mineral exploration and telecommunications site assessments.

Eleven team members represent the ALTMS team. The Goddard members include Krabill, George Alcorn, Geary Schwemmer , Jack Bufton, Patrick Coronado, Donald Friedman and Fran Stetina. Team members from Houston Advanced Research Center include John Hill, Terry Kunz and Don DiRosa. Team member Dan Cotter represented TerraPoint.

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